## Amendments to the Claims

1. (Previously Presented) A magnetic recording medium comprising:

a substrate;

a magnetic layer on the substrate and comprising a first ferromagnetic film, a second ferromagnetic film, and a nonferromagnetic film between the first and second ferromagnetic films; and

wherein the magnetic layer has a plurality of concentric data tracks, each of the data tracks being patterned along the track into first regions with the first and second ferromagnetic films being antiferromagnetically coupled across the nonferromagnetic film, and second regions with the first and second ferromagnetic films being ferromagnetically coupled, the second regions being magnetically recordable data bits.

2. (Original) The medium of claim 1 wherein the first ferromagnetic film in the first regions has a thickness t1 and a magnetization M1, the second ferromagnetic film in the first regions has a thickness t2 and a magnetization M2, and wherein the magnetic moment per unit area (M2xt2) is greater than the magnetic moment per unit area (M1xt1), whereby the magnetic field from the first regions is essentially zero at a predetermined distance above the magnetic layer.

3. (Original) The medium of claim 2 wherein the first and second ferromagnetic films are formed of substantially the same material, and wherein t2 is greater than t1.

4. (Original) The medium of claim 1 wherein the nonferromagnetic film is formed of a material selected from the group consisting of ruthenium (Ru), chromium (Cr), rhodium (Rh), iridium (Ir), copper (Cu), and their alloys.

5. (Original) The medium of claim 1 wherein the first and second ferromagnetic films are made of a material selected from the group consisting of Co, Fe, Ni, and their alloys.

6. (Previously Presented) A magnetic recording medium comprising:

a substrate;

a magnetic layer on the substrate and comprising a first ferromagnetic film, a second ferromagnetic film, and a nonferromagnetic film between the first and second ferromagnetic films; and

wherein the magnetic layer is patterned into first regions with the first and second ferromagnetic films being antiferromagnetically coupled across the nonferromagnetic film, and second regions with the first and second ferromagnetic film being ferromagnetically coupled;

wherein the first ferromagnetic film includes an interface film consisting essentially of cobalt located at the interface of the first ferromagnetic film and the nonferromagnetic film.

7. (Previously Presented) A magnetic recording medium comprising:

a substrate;

a magnetic layer on the substrate and comprising a first ferromagnetic film, a second ferromagnetic film, and a nonferromagnetic film between the first and second ferromagnetic films; and

wherein the magnetic layer is patterned into first regions with the first and second ferromagnetic films being antiferromagnetically coupled across the nonferromagnetic film, and second regions with the first and second ferromagnetic film being ferromagnetically coupled;

wherein the second ferromagnetic film includes an interface film consisting essentially of cobalt located at the interface of the second ferromagnetic film and the nonferromagnetic film.

8. (Original) The medium of claim 1 further comprising a nonferromagnetic underlayer located on the substrate between the substrate and the magnetic layer.

9. (Original) The medium of claim 1 further comprising a protective overcoat formed over the magnetic layer.

10. (Previously Presented) A magnetic recording disk comprising:

a substrate;

a nonferromagnetic underlayer on the substrate;

a magnetic recording layer on the underlayer and having a plurality of concentric data tracks, the recording layer comprising a first cobalt alloy ferromagnetic film, a nonferromagnetic spacer film of a material selected from the group consisting of ruthenium (Ru), chromium (Cr), rhodium (Rh), iridium (Ir), copper (Cu), and their alloys formed on and in contact with the first ferromagnetic film, and a second cobalt alloy ferromagnetic film formed on and in contact with the spacer film, each of the data tracks on the magnetic recording layer being patterned along the track into first regions wherein the spacer film has a thickness sufficient to induce the second ferromagnetic film to be exchange coupled antiferromagnetically to the first ferromagnetic film across the spacer film and second regions wherein the first and second ferromagnetic films are not antiferromagnetically coupled, whereby each of said second regions produces a magnetic field a predetermined distance above the magnetic layer that is greater than the magnetic field from each of said first regions, the magnetic fields above the second regions representing the bits along the data track; and

a protective overcoat formed on the magnetic recording layer.

11. (Original) The disk of claim 10 wherein the first and second ferromagnetic films of the magnetic recording layer are formed of substantially the same material.

12. (Original) The disk of claim 10 wherein the first and second ferromagnetic films of the magnetic recording layer are made of a material selected from the group consisting of Co, Fe, Ni, and their alloys.

13. (Previously Presented) A magnetic recording disk comprising:

a substrate;

a nonferromagnetic underlayer on the substrate;

a magnetic recording layer on the underlayer comprising a first cobalt alloy ferromagnetic film, a nonferromagnetic spacer film of a material selected from the group consisting of ruthenium (Ru), chromium (Cr), rhodium (Rh), iridium (Ir), copper (Cu) and their alloys formed on and in contact with the first ferromagnetic film, and a second cobalt alloy ferromagnetic film formed on and in contact with the spacer film, the magnetic recording layer being patterned into first regions wherein the spacer film having a thickness sufficient to induce the second ferromagnetic film to be exchange coupled antiferromagnetically to the first ferromagnetic film across the spacer film and second regions wherein the first and second ferromagnetic film are not antiferromagnetically coupled, whereby said second regions produce a magnetic field a predetermined distance above the magnetic layer that is greater than the magnetic field from said first regions; and

a protective overcoat formed on the magnetic recording layer;

wherein the first ferromagnetic film of the recording layer includes an interface film consisting essentially of cobalt located at the interface of the first ferromagnetic film and the spacer film.

14. (Previously Presented) A magnetic recording disk comprising:

a substrate;

a nonferromagnetic underlayer on the substrate;

a magnetic recording layer on the underlayer comprising a first cobalt alloy ferromagnetic film, a nonferromagnetic spacer film of a material selected from the group consisting of ruthenium (Ru), chromium (Cr), rhodium (Rh), iridium (Ir), copper (Cu), and their alloys formed on and in contact with the first ferromagnetic film, and a second cobalt alloy ferromagnetic film formed on and in contact with the spacer film, the magnetic recording layer being patterned into first regions wherein the spacer film has a thickness sufficient to induce the second ferromagnetic film to be exchange coupled antiferromagnetically to the first ferromagnetic film across the spacer film and second regions wherein the first and second ferromagnetic films are not antiferromagnetically coupled, whereby said second regions produce a magnetic field a predetermined distance above the magnetic layer that is greater than the magnetic field from said first regions; and

a protective overcoat formed on the magnetic recording layer;

wherein the second ferromagnetic film of the recording layer includes an interface film consisting essentially of cobalt located at the interface of the second ferromagnetic film and the spacer film.

15. (Previously Presented) The disk of claim 1 wherein the second regions are ion-irradiated regions.

16. (Previously Presented) The disk of claim 10 wherein the second regions are ion-irradiated regions.